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Notice of Allowability

Application No.

10/541,449

Examiner

Megann E. Vaughn

Applicant(s)

GRASSLIN ET AL.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment after final filed 11/20/2005.
2. ☒ The allowed claim(s) is/are 1-19.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **Thomas Kocovsky** on 12/1/2006.

2. The application has been amended as follows:

A) Replace claim 1 of the 11/20/2006 Amendment After Final response with the following **Examiner amended claim 1**:

---Claim 1 (currently amended) A high-frequency system for an MR apparatus with a high-frequency coil arrangement comprising a plurality of resonator elements, which coil arrangement is coupled to a transmit unit where a respective transmit channel of the transmit unit is assigned to the resonator elements,

wherein the transmit unit comprises a plurality of high-frequency amplifiers, the inputs of which receive low-power transmit signals via a first controllable distributor network, in which the output signals of the high-frequency amplifiers are distributed over the transmit channels via a second controllable distributor network **to generate a plurality of individually amplitude adjusted RF signals that are applied to the resonator elements.**

B) Replace claim 18 of the 11/20/2006 Amendment After Final response with the following **Examiner amended claim 18**:

---Claim 18 (currently amended) A magnetic resonance method comprising:

 distributing a plurality of low power RF signals among inputs to a plurality of power amplifiers;

controllably distributing individually amplitude adjusted outputs from the plurality of power amplifiers among a plurality of RF channels;

 during a transmit mode, connecting **the outputs** from the plurality of RF channels to a plurality of resonator elements to excite resonance in a subject adjacent the resonator elements.

C) Replace claim 19 of the 11/20/2006 Amendment After Final response with the following **Examiner amended claim 19**:

---Claim 19 (currently amended) The method as claimed in **claim 18** further including:

 during a receive mode, connecting the plurality of resonator elements with a plurality of receiver channels;

 reconstructing signals from the receive channels into a diagnostic image.

3. The following is an examiner's statement of reasons for allowance:

Claims 1-10 are allowable over the prior art of record because the prior art of record does not teach or disclose a high-frequency system for an MR apparatus with a high-frequency coil arrangement wherein the transmit unit comprises a plurality of high-frequency amplifiers, the inputs of which receive low-power transmit signals via a first controllable distributor network, in which the output signals of the high-frequency amplifiers are distributed over the transmit channels via a second controllable distributor network to generate a plurality of individually amplitude adjusted RF signals that are applied to the resonator elements, in combination with the remaining limitations of the claims

Claims 11, 12, 14, and 15 are allowable over the prior art of record because the prior art of record does not teach or disclose a magnetic resonance system comprising a second, controllable distribution network connected with outputs of the plurality of power amplifiers and with the plurality of resonator elements, which controllably distributes output signals from the plurality of amplifiers over a plurality of transmit unit outputs to generate the plurality of individually amplitude adjusted RF signals that are applied to the resonator elements, the relative amplitude of each of the individually amplitude adjusted RF signal being adjusted by the first and second distribution networks, in combination with the remaining limitations of the claims

Claims 13, 16, and 17 are allowable over the prior art of record because of the reasons stated in the previous office action.

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Claims 18-19 are allowable over the prior art of record because the prior art of record does not teach or disclose a magnetic resonance method comprising controllably distributing individually amplitude adjusted outputs from the plurality of power amplifiers among a plurality of RF channels, in combination with the remaining limitations of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

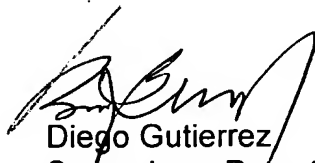
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megann E. Vaughn whose telephone number is 571-272-8927. The examiner can normally be reached on 8 am- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MEV
Patent Examiner Art Unit 2859
12/1/2006

for 
Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800